

China Spallation Neutron Source (CSNS) MANTID Project High Level Road Map

Summary

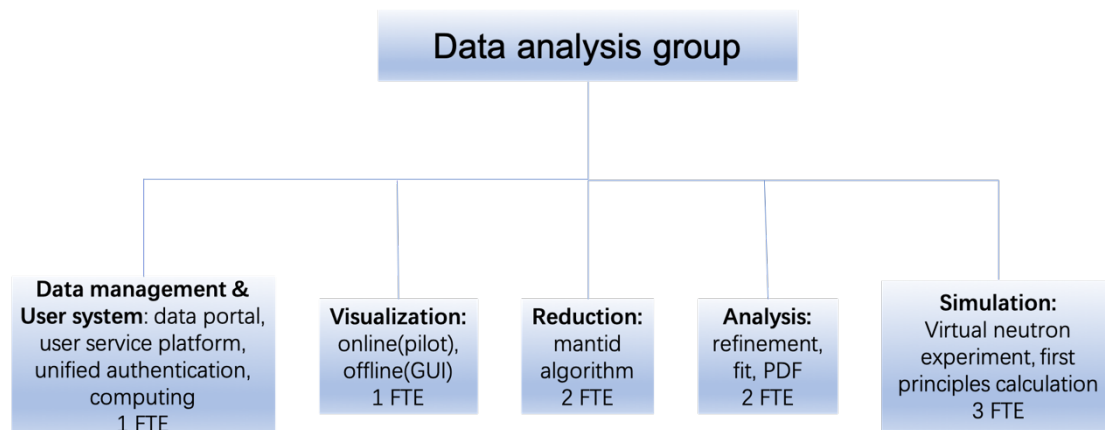
CSNS intends to develop and use the MANTID project software as a major component of its software suite to ensure a fully functioning software environment for CSNS operations in 2020.

This document describes the forward looking strategy of CSNS and the Data Analysis Group (DAG) for collaboration with the MANTID Project partners as a member.

Data Analysis Group for CSNS operations

DAG is responsible for all aspects data analysis at CSNS:

- 1.Data reconstruction, reduction and visualization software.
- 2.Data analysis and simulation.
- 3.Data management and computing.
- 4.User system.



Project structure and staffing

It has always been the intention of the CSNS to leverage the capability of existing software projects and frameworks to guarantee operational success. To this end and with the objectives of DAG in mind it is clear that development and usage of MANTID at CSNS will be resourced and operated in a similar manner as at ISIS and ORNL NDAV.

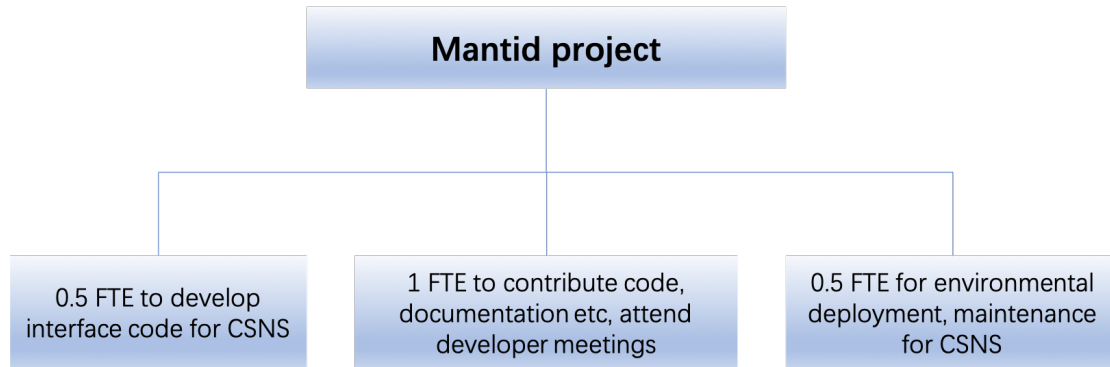
Our objectives will be realized by creating a single core development team with responsibility to deliver two key projects:

1. Data reduction and visualization (utilizing the MANTID framework)
2. Data management and user system.

It is envisaged that the team will be resourced by a mixture of CSNS staff and staff working through an in-kind contribution to CSNS.

We plan to provide 1 FTE for MANTID project to contribute code,

documentation etc, and attend developer meetings, 0.5 FTE to develop interface and algorithms code for CSNS, and 0.5 FTE for environmental deployment, maintenance for CSNS.



As the number of instruments increases in the future, the team will be augmented by instrument scientist who can service instrument requirements for analysis that fit within MANTID and also fit within the existing functionality provided by the MANTID Framework. The core development team will focus on ongoing requirements and contribute to the wider MANTID development.

MANTID Development Roadmap (May 2019)

The development requirements for MANTID as of May 2019 can be split into two broad themes:

1. Core framework requirements.

The core framework requirements for CSNS are those that all instruments will use and/or require. Some CSNS high level requirements are:

- (1) Develop instrument definition files for all instruments at CSNS.
- (2) Improve specific nexus data format , and develop LoadCSNSNexus algorithm.
- (3) Develop data reduction workflow for all instruments at CSNS.
- (4) Integration data reduction interfaces for all instruments at CSNS.
- (5) Development of the MANTID framework to allow distributed instances of MANTID within the CSNS compute environment as a requirement to fulfill the objective of real time visualization.
- (6) Integration of the CSNS ICAT environment.

2. Instrument specific requirements as of May 2019

- (1) Integration data reduction GUI for 3 instruments(SANS, MR, GPPD) at CSNS into MANTID before this year.
- (2) Data reduction for next stage include total scattering, inelastic scattering(direct) and engineering diffraction will be developed in 2-3 years.